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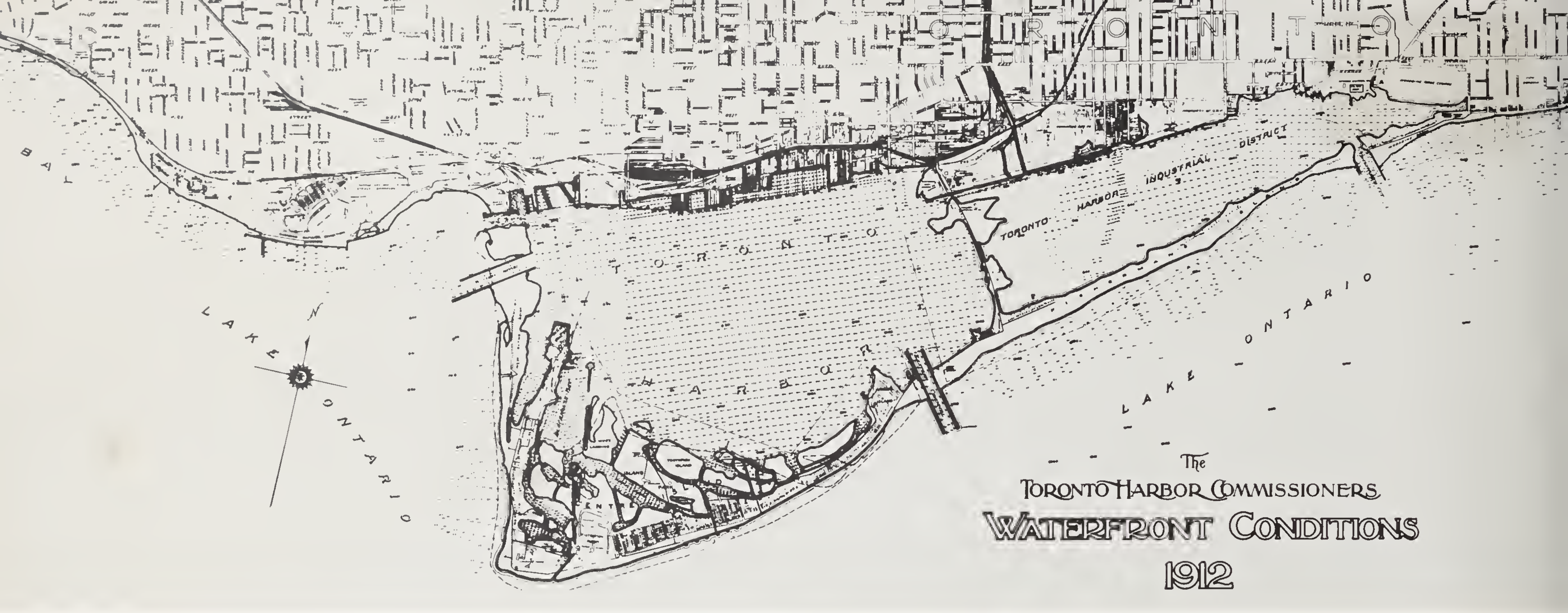
A BOLD CONCEPT

FOR THE REDEVELOPMENT OF THE TORONTO WATERFRONT



FOREWORD

At the start of the second century of our nation Toronto rediscovers its waterfront, the area that over 300 years ago was responsible for the existence of the settlement that has grown to the City of 2 million people.

A bold new concept has been unveiled — it is Tomorrow's Waterfront Today.

The lakefront from Ajax to Clarkson, a distance of fifty miles, has been studied. The conceptual plans propose a mixture of Port, recreation, islands, nature and people—tens-of-thousands of people living on sections of the waterfront—tens-of-thousands using its parks, water, beaches, and recreation areas. It is living; it is commerce; it is fun; it is beauty; it is co-ordinated and balanced.

The plan for the Central Toronto Section of the total Metropolitan waterfront has been prepared by The Toronto Harbour Commissioners (with the City of Toronto Planning Board Staff in relation to the Eastern Beaches) and with the full co-operation of the City, Metropolitan Toronto, Province of Ontario and Federal Government officials.

The requirement of a new Outer Harbour for the Port of Toronto has, for many years, been the force behind studies of the Commissioners of a new Toronto waterfront and several key requirements to make the plan possible.

It has been of great satisfaction to the Commissioners during this study that the total Metropolitan Waterfront came under reassessment and the central area can be related to a total Metropolitan Waterfront conception.

The Central Section has been planned by Mr. J. H. Jones, the Commissioners' Chief Engineer, as a single unit with a balanced development to be carried out as a continuing project.

E. B. GRIFFITH, Q.C.
GENERAL MANAGER
THE TORONTO HARBOUR COMMISSIONERS

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A conceptual plan for the development of

THE CITY OF TORONTO WATERFRONT

BY J. H. JONES, P.Eng.
CHIEF ENGINEER, THE TORONTO HARBOUR COMMISSIONERS

JANUARY 1968

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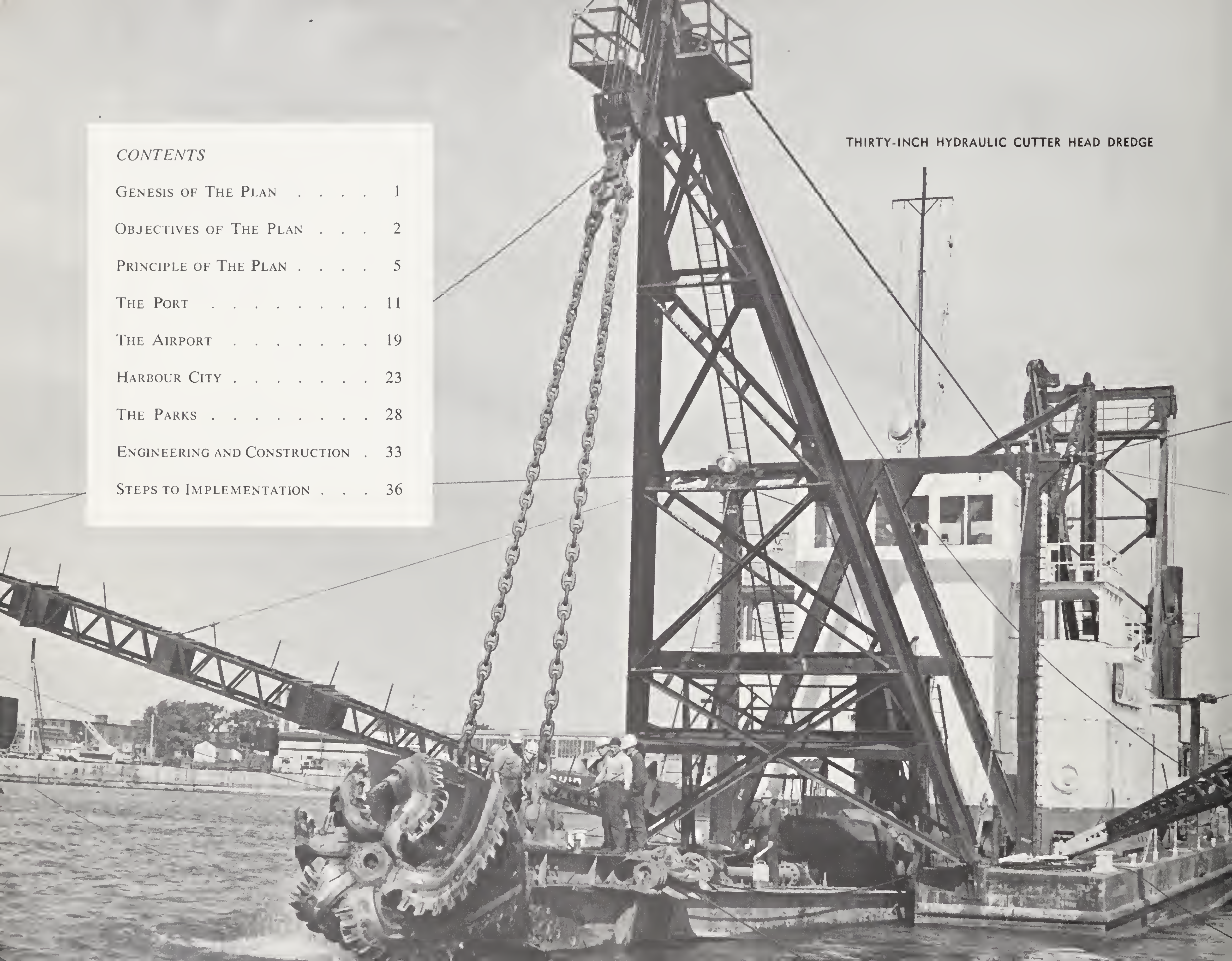


THIRTY-INCH HYDRAULIC CUTTER HEAD DREDGE

genesis of the plan

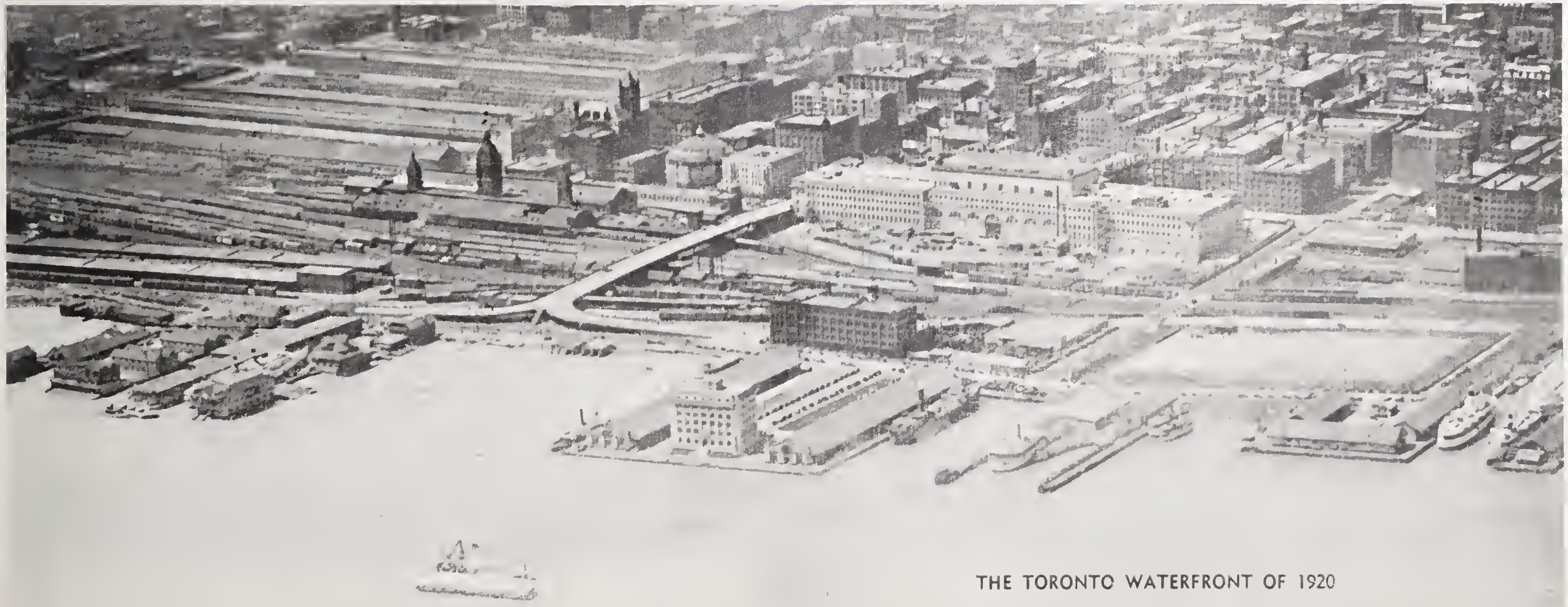
In 1912, the Toronto Harbour Commissioners conceived and commenced the implementation of a plan for the long-range development of Toronto's waterfront area.

Today, in essence, that plan has been realized. It served the needs of the Harbour admirably and helped to propel Toronto into its position of a major shipping port.

But now a new plan for the continuing development of the Toronto waterfront to meet pressing needs is urgently required. Without such a plan, limited and disjointed development will result.

The bold concept of 1912 proved of immeasurable benefit, not only to their needs in that time but ultimately to our needs in our time.

Therefore, it is imperative that we in turn draw up an even



THE TORONTO WATERFRONT OF 1920

bolder plan which will prove of equal benefit, not to the needs of this generation alone but to the needs of coming generations.

Fortunately, because of great and as yet barely tapped geological assets, Toronto today is in an enviable position to conceive and implement just such a plan—a plan of enormous magnitude and benefit that will be a logical continuation of what the planners of 1912 initiated.

The geological assets are deep deposits of sand lying offshore from the centre of the City. In these sand deposits is found the basis of the plan.

For, by the employment of sophisticated dredging techniques, these deposits of sand can be removed, then transported and used to create wholly new land-areas.

The cost of this process of land reclamation is less, much less, than the ultimate value of the new land-areas created.

Thus, in this light, the plan is economically viable. The financial return on the cost of the necessary dredging is amply provided by the enormous value—upwards of forty million dollars—obtained from the creation of revenue-generating land.

objectives of the plan

(1) To provide for the future needs of the Port of Toronto by insuring its continuing economical and efficient growth.

(2) To create a modern downtown Airport for inter-city jet aircraft.

(3) To create a new and unique Harbour City for 50,000 people.

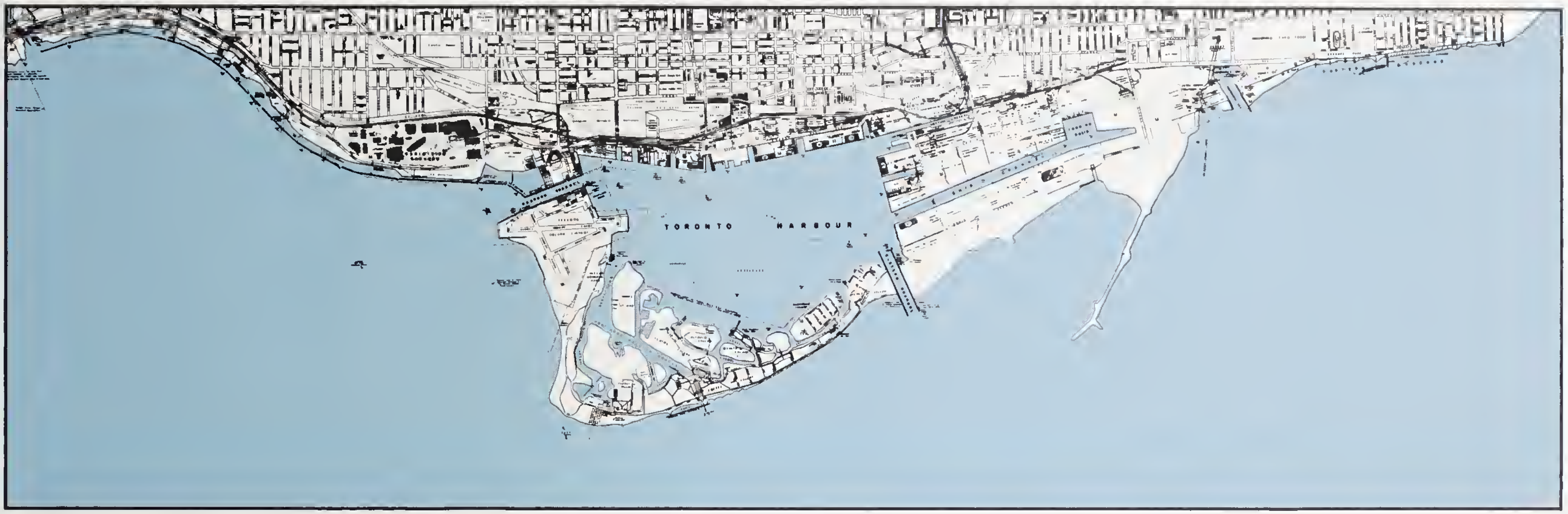
(4) To enlarge and improve the Toronto Islands and waterfront parklands and associated recreational facilities.

(5) To create a sports complex of international standard and suitable for the Olympic Games.

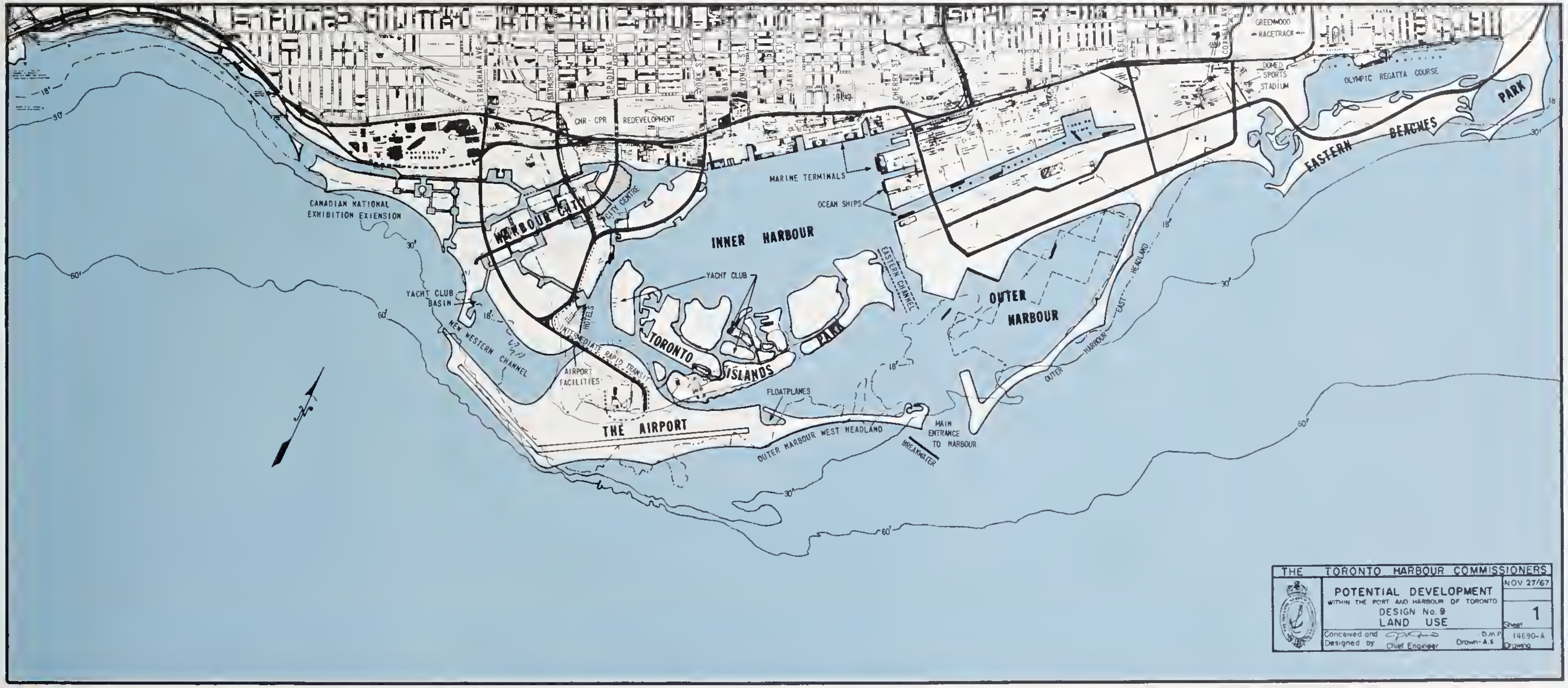
(6) To provide for the expansion and revitalization of the Canadian National Exhibition.

(7) To provide balance of use of the waterfront to meet all community needs.

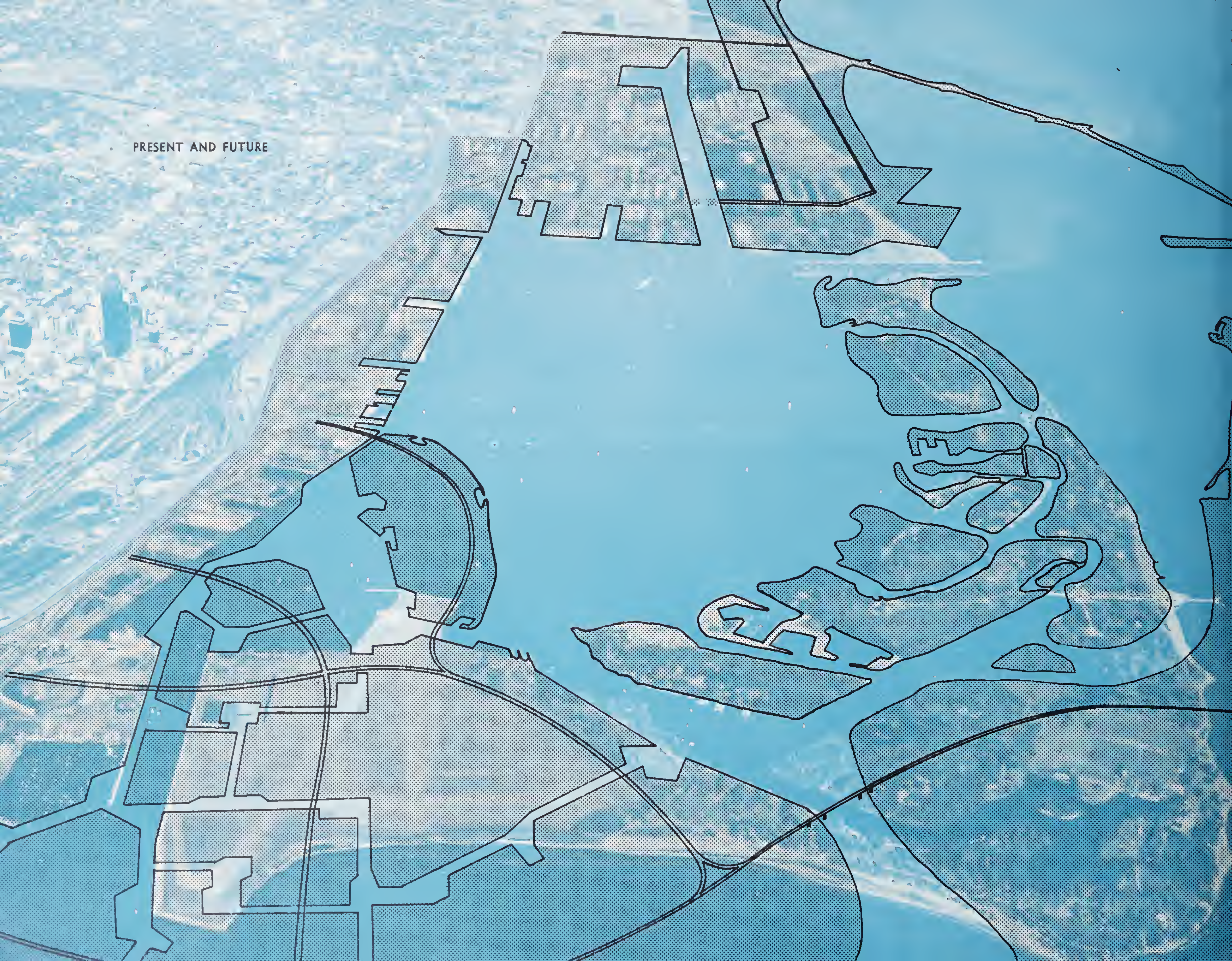
(8) To integrate these objectives into a cohesive and economically sound plan.



COMPARISON OF PRESENT AND PROPOSED SHORELINES



PRESENT AND FUTURE



principle of the plan

In principle, the plan involves the development and integration of several separate components into a cohesive part of the City of Toronto.

An expanding port, the waterfront airport, new waterfront parks and recreational and sporting activities, and a Harbour City are proposed on new lands which can be quickly and economically obtained.

Deep deposits of sand with which the Toronto waterfront is blessed will be dredged and used to create large new land areas. The cost will be minimal compared with their ultimate value after development.

The cost and methods of reclamation have already been tested and proven in the Harbour Commissioners' past and current works.

The plan evolves as a sequence of inter-related and interlocking elements. The beginning of the plan is found in the creation of the Outer Harbour of the Port of Toronto.

The concept of the Outer Harbour is based upon the construction of the East Headland and the West Headland. Flanking the Eastern Channel, they are breakwaters acting to protect and enclose the Outer Harbour and greatly increase the capacity of the Port.

Both Headlands will be constructed economically and efficiently.

In the case of the East Headland, material is daily excavated from the numerous building sites in the City and transported by dump trucks to the Headland site. The material is then used as fill. Construction of the East Headland is well under way with a completion date of 1970.

For the West Headland, material dredged from the Eastern Channel will be used.

Construction of the West Headland should commence as soon as possible. For when the Eastern Channel has been dredged, it will be capable of serving as the primary entry point to the Harbour for shipping.

The Western Channel, now the primary entry point, will cease to be of vital importance to the Port. It will be filled, except for a small boat channel, and become part of the Harbour City waterways. A new Western Channel will be opened to the south for the purpose of water circulation in the Inner Harbour, small boat use, and emergency shipping.

The creation of the Outer Harbour opens up a new area for major Port development and use. In turn, the phasing-out of the Western Channel frees an area for uses compatible with major development in the surrounding downtown area.

This consideration points the way towards two further major proposals. First, to create a Waterfront Airport on reclaimed land to the south of the existing Islands. Second, to create Harbour City, a high density residential complex, on land now occupied by the Toronto Island Airport but enlarged through reclamation.

The site on which the present Toronto Island Airport stands is not suited to demands of 1968. It does not allow for expansion necessary to accommodate commercial jet aircraft. Nor does it offer convenient access to the City. Currently, the Island Airport is operating at a loss.

The Island Airport must be eliminated or relocated. Because new land can be created through reclamation, relocation and improvement become highly feasible. As the relocated Western Channel is no longer needed for regular ship traffic, a convenient access to the city is possible.

The new Airport will be expressly designed to fulfill a need which the Island Airport cannot. It will serve Toronto as a downtown Airport for inter-city jet travel in a location just minutes from downtown.

The proposed West Headland, previously mentioned as an important part of the Port, also plays a significant role in the development of the Waterfront Airport. It will form the required approach-lighting land for the Airport's main runway of 7,000 feet.

The creation of Harbour City is of keystone importance in the realization of the plan for two reasons.

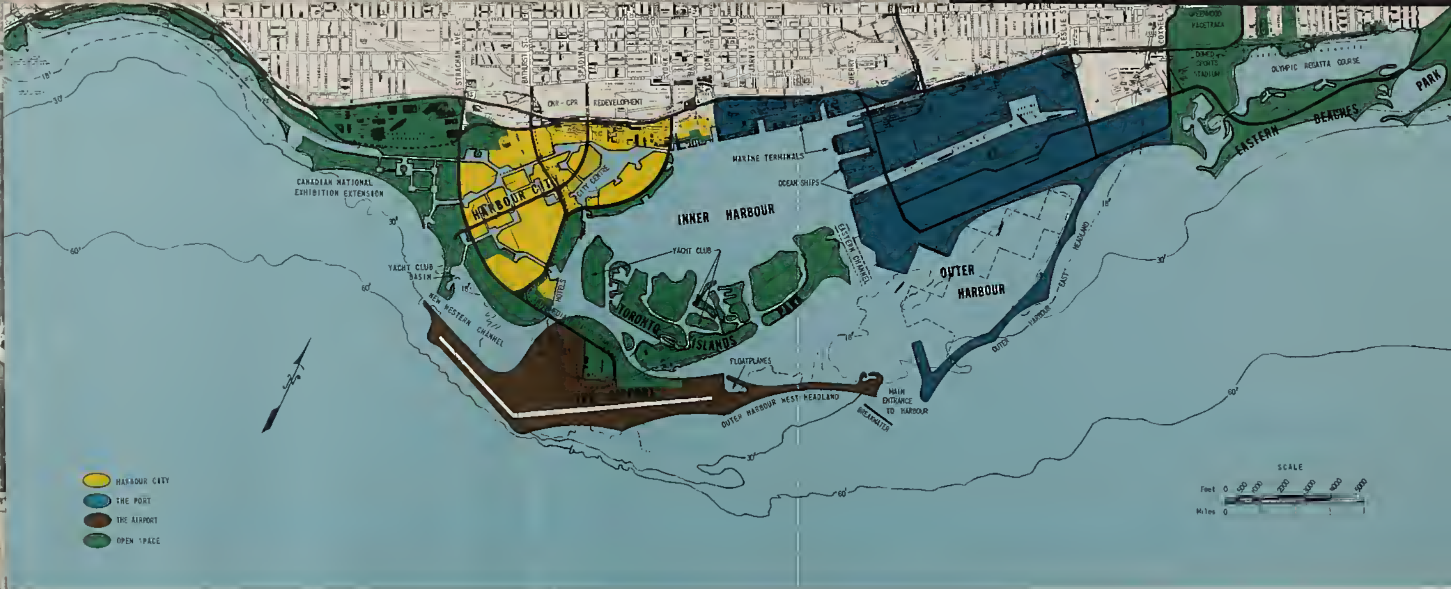
Firstly, and uniquely, it will provide the City, already desperately short of housing land, accommodation for some 50,000 people.

Secondly, it will generate enormous revenue, sufficient it is thought, to recover the cost of all land reclamation proposed in this conceptual plan in the vicinity of Toronto Islands.

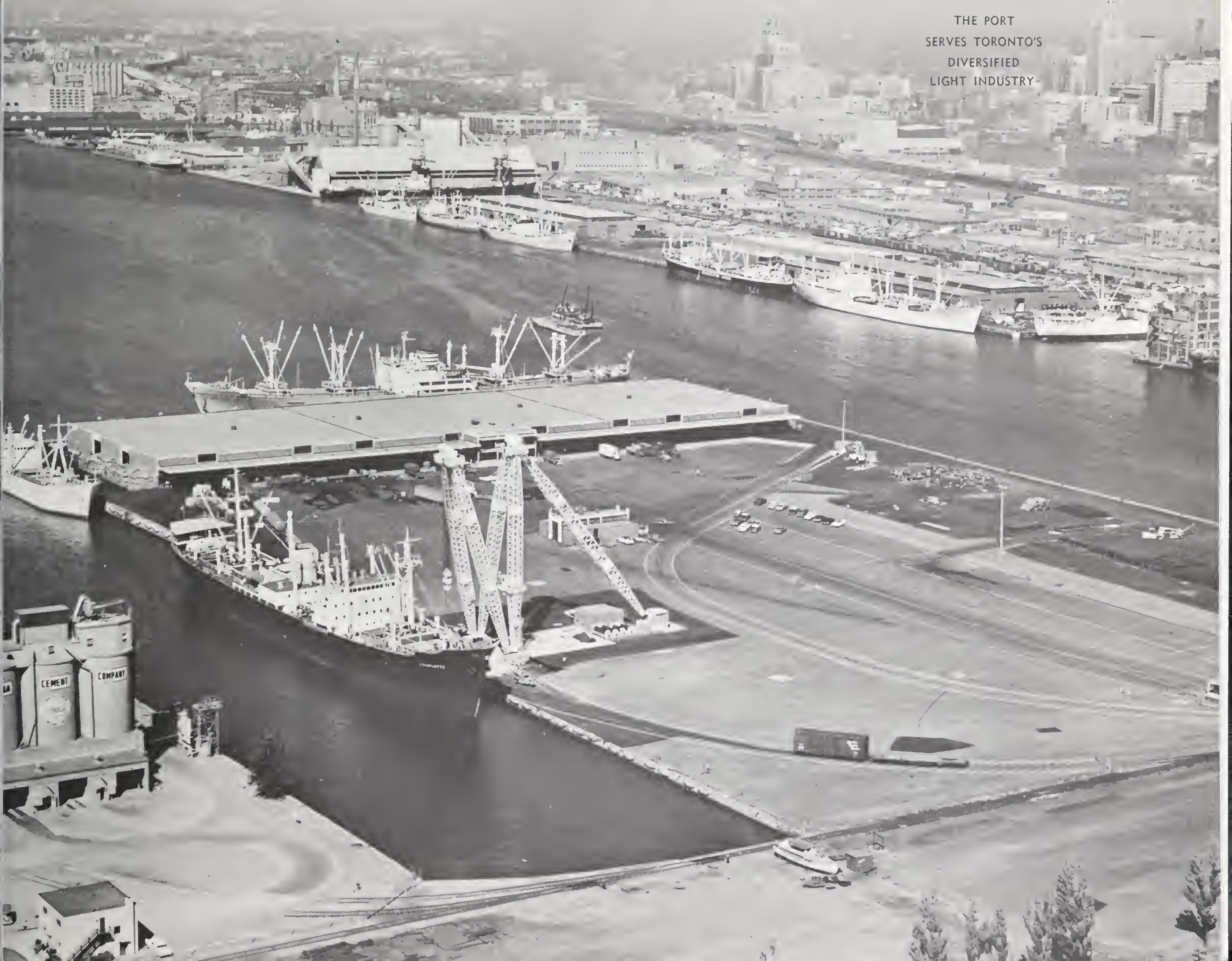
The remaining element of the plan is the creation, through reclamation, of new waterfront parklands and large new areas of protected waters for sporting and recreational activities. This will include lands for the expansion of the Canadian National Exhibition. The extended Islands off the Eastern Beaches are particularly well located for a major international sports area, and would be an ideal location for an Olympic City.

While the major elements now listed are the most important part of the concept, many other benefits arise from the plan. A significant one concerns the present Toronto Islands. Because of poor access and inadequate parking facilities, their full potential has not been realized. Economical land reclamation will provide adequate car parking facilities while an intermediate rapid transit system will provide excellent access.

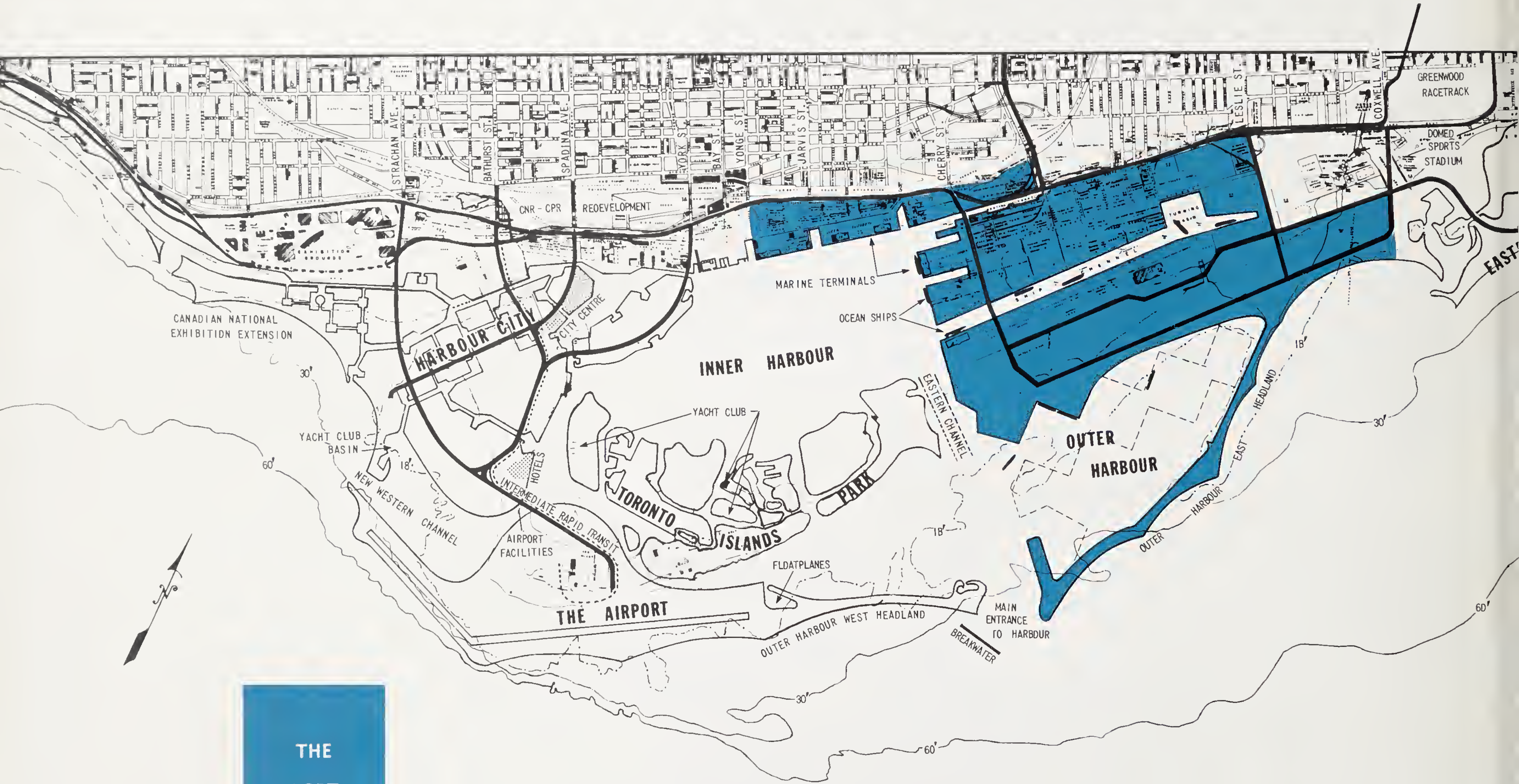
The plan has been designed in a comprehensive way with the knowledge that it will be a part of an already thriving City. To that end, it has been designed to integrate into the existing City fabric and with major developments now being planned for the Canadian Pacific and Canadian National railway lands immediately to the north.



A conceptual plan for the development of **THE CITY OF TORONTO WATERFRONT**



THE PORT
SERVES TORONTO'S
DIVERSIFIED
LIGHT INDUSTRY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CNR - CPR
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TORONTO ISLANDS PARK
AIRPORT FACILITIES
FLOATPLANES
THE AIRPORT
OUTER HARBOUR WEST HEADLAND
BREAKWATER
MAIN ENTRANCE TO HARBOUR
EAST
30'
18'
60'
N

THE PORT

the port

GENERAL COMMENTS

Toronto is a commercial city of very diversified light industry. The development of the Port of Toronto reflects this diversity.

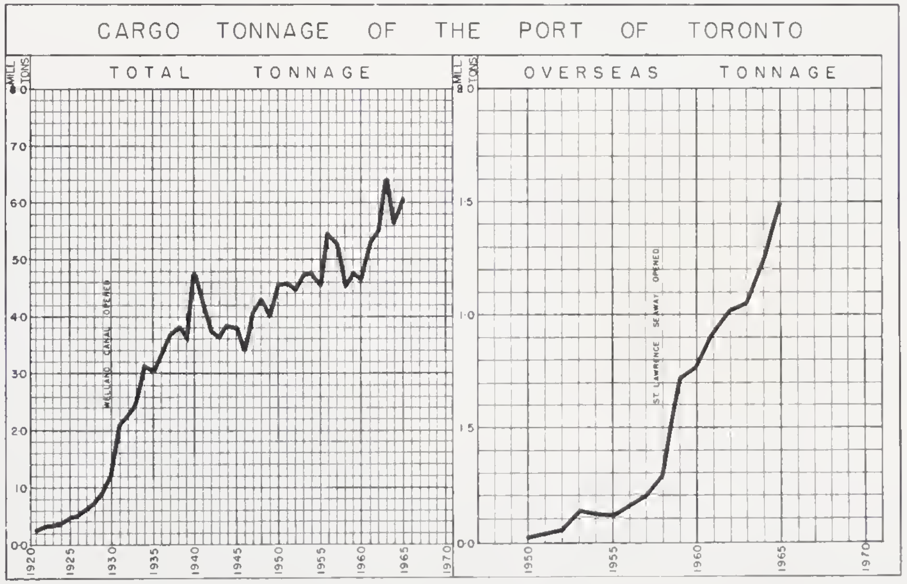
In the operation of the Port, a basic factor affects the viewpoint of the Toronto Harbour Commission: the Port receives no tax revenues or grants to support it. The Toronto Harbour Commission places charges on ships using the Port, places charges on the cargo it handles, and rents its land to tenants. This source of income more or less balances the cost of administrating and operating the Port. Much of the capital needed to construct Port facilities has come from the sale of lands previously reclaimed. The Federal government, in keeping with its general policy, carries out certain operations, such as the dredging of the main shipping channels.

Only a few industries in the Port are oriented to the manufacture of bulk cargo. The largest single industry in terms of cargo consumption is the R. L. Hearn Generating Station which uses approximately one million tons of coal per year. Three elevators process grain and one company refines sugar.

Domestic bulk cargo is handled by private enterprise, while international overseas trade is handled through marine terminals owned and operated by the Toronto Harbour Commission. Trucking provides the main source of transportation to and from the Port.

The area served by the Port of Toronto lies primarily within a one-hundred mile radius of the Port. Fully one-third of the purchasing power of Canada exists within this radius.

A phenomenal growth in population in the general Port area is predicted in the coming years. This, of course, will result in greatly increased cargo volume for the Port.



To meet this increase in volume, the Toronto Harbour Commissioners are carrying out two plans:

(1) Consolidation of the present Port area.

(2) Construction of a new Outer Harbour. In accordance with a long-standing agreement with the City, this construction is being done in the area between Coatsworth Cut and the Eastern Entrance.

The philosophy of development of the new Outer Harbour is this: To create an area into which the Port can efficiently grow, thus allowing the pattern of docks and wharves to change as the size of ships and the method of cargo handling undergo future changes.

Here, in the key area of Port design and planning, maximum flexibility to meet constantly changing conditions and influences is of utmost importance.

For today, we are witnessing revolutionary changes in shipping. First, in ship sizes. Secondly, in cargo handling methods. But because these changes are in a state of flux at this moment, their ultimate direction and influence are impossible to determine.

For example, in the area of cargo handling methods, some experts predict that, by 1980, 60% of all cargo will move by containerization methods. Yet others predict that the main trend will be to unitized cargo.

The facilities for full container ships can handle four times as much cargo over a single berth as a conventional general berth, but the back-up land behind that berth must be four times greater.

Yet precisely because the final extent of containerized shipping is as yet unknown, it is impossible to establish the ratio of ship berths to land-mass in the Port.

Another planning consideration exists: the proposal to relocate the grain industry in the Outer Harbour. But until the specific design requirements for such a move are fully known, a definite outlining of Port patterns cannot be made.

From the foregoing, it is apparent that Port planning and design to meet future needs must be allowed ample room to meet, adapt to, and comply with, unpredictable changes in cargo shipping and methods.

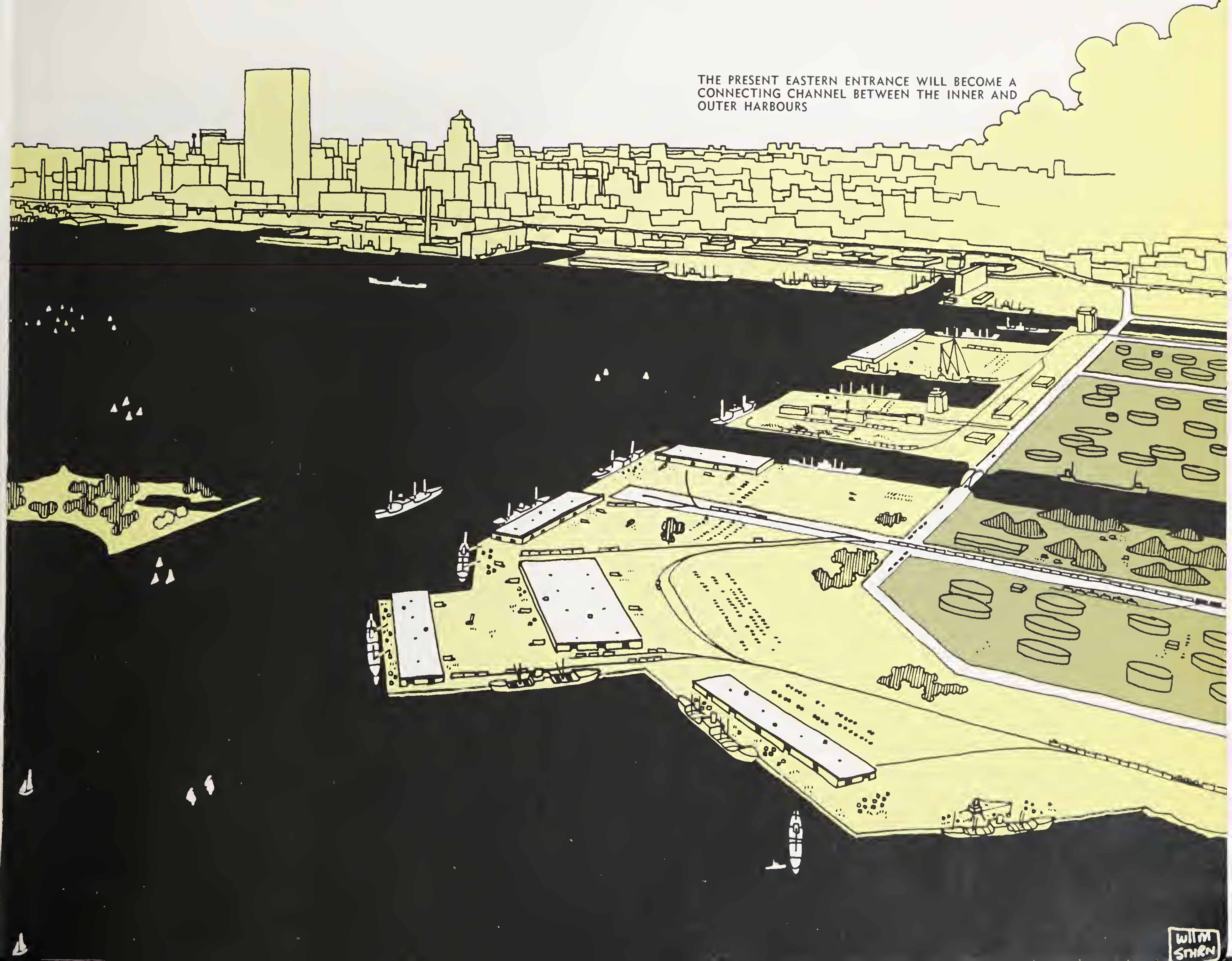
OUTER HARBOUR

For many years, The Toronto Harbour Commissioners have been aware of the need to provide for Port expansion into the lake. The rate of the growth of the Port would indicate that the Outer Harbour is required by about 1970.

Two years ago, the Commission was faced with the proposition of building a massive breakwater at a cost of about twenty million dollars. It would not have been possible to recover this cost from Port charges. By experimenting in the method of shore stabilization, the Commission has found an economical method of constructing a breakwater, or headland, in the lake.

Thus, to meet growth needs and provide required flexibility, the Toronto Harbour Commissioners are currently embarked on the creation of an Outer Harbour and have completed about one-half of the Outer Harbour East Headland that will enclose a basin in Lake Ontario for port development. The basin will be about two-thirds the size of the Inner Harbour. This area will be capable of supporting new facilities that could double the capacity of the Port.

The Toronto Harbour Commissioners' present program of creating the Outer Harbour is taking advantage of the unique opportunity to construct the Outer Harbour East



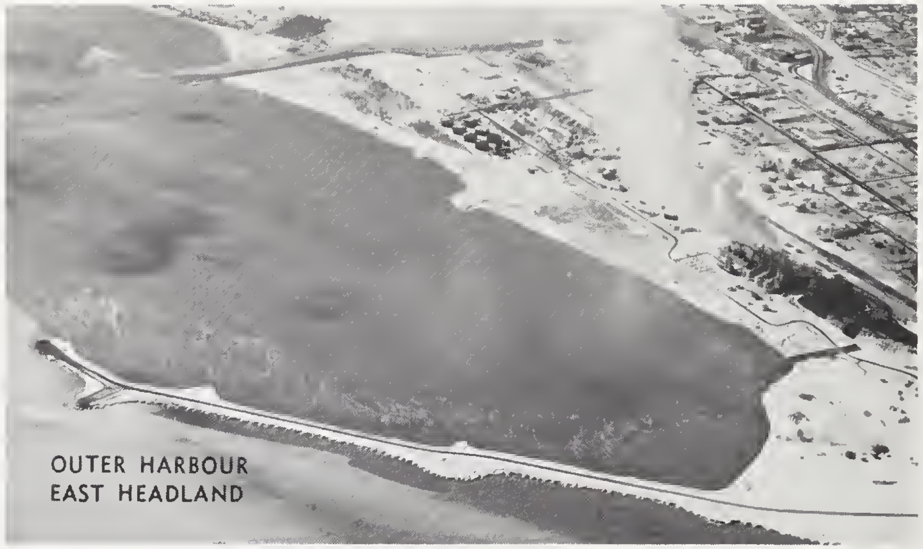
THE PRESENT EASTERN ENTRANCE WILL BECOME A CONNECTING CHANNEL BETWEEN THE INNER AND OUTER HARBOURS

Headland by the use of construction-excavated material from City building sites. About one million cubic yards of material a year are being placed to form the Headland. A typical day will see 500 trucks dumping fill to form the Headland about 200 feet wide that now extends 1½ miles from the original shoreline at the foot of Leslie Street. It is expected that the Headland will extend to a point two-thirds of a mile south of the Eastern Gap by 1970.

By this unique method, a breakwater is being constructed at a rate of about ten feet per day for less than one million dollars. Much of the economy for the breakwater construction has been the method adopted for resistance to erosion of wave action. It simulates nature in that fill material is allowed to be shifted by wave action until beaches are formed. Rubble from building demolition is used to form long points of land that act as anchors for the water-segregated sand beaches. This system of shore stabilization has withstood the most severe winter storms.

The Eastern Entrance served a useful purpose while the 250 ft. ships were in common use. But since the opening of the St. Lawrence Seaway to larger ships it has been little used. The Eastern Entrance was never considered for the main entrance to the Harbour because of the annual dredging of about forty thousand cubic yards, necessary to maintain the depth of the channel for the 14 ft. draft vessels. The construction of the Outer Harbour East Headland has eliminated the silting of the Eastern Channel by cutting off the littoral drift from the east. Therefore, the Eastern Entrance can now be made the main entrance to the Inner Harbour.

With the completion of the Outer Harbour, the present Eastern Entrance will become a connecting channel between the Inner and Outer Harbours. Commercial shipping will use the Eastern Channel when Seaway depth is available as this route is shorter for most destinations.



Silting of the proposed new harbour entrance can be eliminated by extending the beach anchoring-points to trap the littoral drift.

In order to protect the Outer Harbour from the south-west storms, a breakwater west of the Entrance is required. The concept plan illustrates how this can be integrated into the development of a new Waterfront Airport. When the Outer Harbour Headlands have been completed, Port development can expand through the present Eastern Gap area into the Outer Harbour. Port facilities in the Outer Harbour can then be developed at a rate consistent with the growth in shipping.

It is contemplated that a development of overseas cargo facilities will take place adjacent to the present Eastern Entrance and form a marine terminal complex encompassing the most recently completed Marine Terminal 51. With the immediate growth of the Harbour taking place in the Eastern Entrance, the actual pattern of the development of the Outer Harbour can be delayed until a more indicative trend in the required Port design emerges from the current revolution in cargo handling.

The creation of a spacious Outer Harbour will permit flexibility of design capable of adjustment to future methods of cargo handling. The necessary land mass can be created by using fill from the dredging of the required deep water channels supplemented by land fill from City excavations. If the Richard L. Hearn Generating Plant continues in operation, it is expected that the heat from the cooling water it discharges will keep the Outer Harbour ice-free in winter.

Provision must be made for adequate transportation links with the City street system to meet future demands. It is probable that a road connection through the present Ashbridge's Bay to Coxwell Avenue will be required as the Port develops in the Outer Harbour area.

In some areas there will be some conflict in the use of lands, i.e., the water area lying south of the Main Sewage Treatment Plant. Neither the future Port nor the Sewage Treatment requirements are sufficiently well known to establish a design for this area. It is therefore suggested that the final design and disposition of lands in this area be left in abeyance until a pattern of requirement emerges. In the meantime, there is a need to solve the interim requirements at Ashbridge's Bay and any development that may take place at the Eastern Beaches.

It may take upwards of twenty years to totally convert the Outer Harbour to Port purposes. It is expected that the Outer Harbour, when fully developed, will have a capacity equal to that of the present Port.

Further basins for long-range Port development can be created by filling similar to the present Headland construction. The water would be approximately forty feet deep and construction of these Headlands would be somewhat slower than the construction of the present Headland, which is currently being built in a thirty-foot depth. Until such basins are required for Port development, they could be used for recreational boating purposes.

A new basin could be formed by hooking a new headland to the east from the present Headland. This can only be done if the discharge from the Sewage Treatment Plant is moved.

INNER HARBOUR

It is expected that the easterly half of Toronto Harbour will retain its present character for a considerable period of time, while the westerly portion of the Harbour will undergo radical changes.

From Yonge Street to Parliament Street, modern Port facilities have been created that are aesthetically and functionally compatible with adjacent City development. It would appear that from about Jarvis Street east, the south area of the central City will remain industrial for many years.

Two modern new marine terminals have been constructed on the east side of the Inner Harbour, thus setting the pattern of development in this area.

South of the Gardiner Expressway in the filled lands of the original Ashbridge's Bay is an intensive industrial area. The Commissioners have had for a number of years an active policy in this area to upgrade the standard of industries to create an environment more compatible with the highly commercial character of Toronto's downtown area.

There are industries essential to the community that require large stockpiles of unattractive-looking cargo. Here, the program is to encourage the concentration of these industries along the Ship Channel and create a buffer zone of light Port-oriented industries. Therefore, the traffic in the Ship Channel will be primarily large bulk carriers, suitable for navigating this Channel. The large tonnage from a small number of ships will tend to reduce the conflict with vehicular traffic on the Cherry Street bascule bridge.

THE PORT OF TORONTO SERVES THE MAJOR CONSUMER MARKET OF CANADA

The downtown area of the City from about Jarvis Street west will probably change in character from a mixture of railway uses and antiquated industries to high-density residential and commercial uses, including a transportation centre.

The pattern of development in the very centre of the City's waterfront has been established with the approval of the Marvo development. While this development has been plagued with financial difficulties, its basic concept of land use is sound. One of the difficulties of development in this area is the psychological barrier formed by the railways and the Gardiner Expressway. But if this type of development is enlarged, the attraction to the area will be greater and the barrier will be less formidable.

The Commissioners originally intended to build a marine terminal to handle general overseas cargo as a part of the Marvo complex in the present location of the Toronto Island Ferry Docks. Because of the time lag involved in this project, it was necessary for the Commissioners to build Marine Terminal 51 instead.

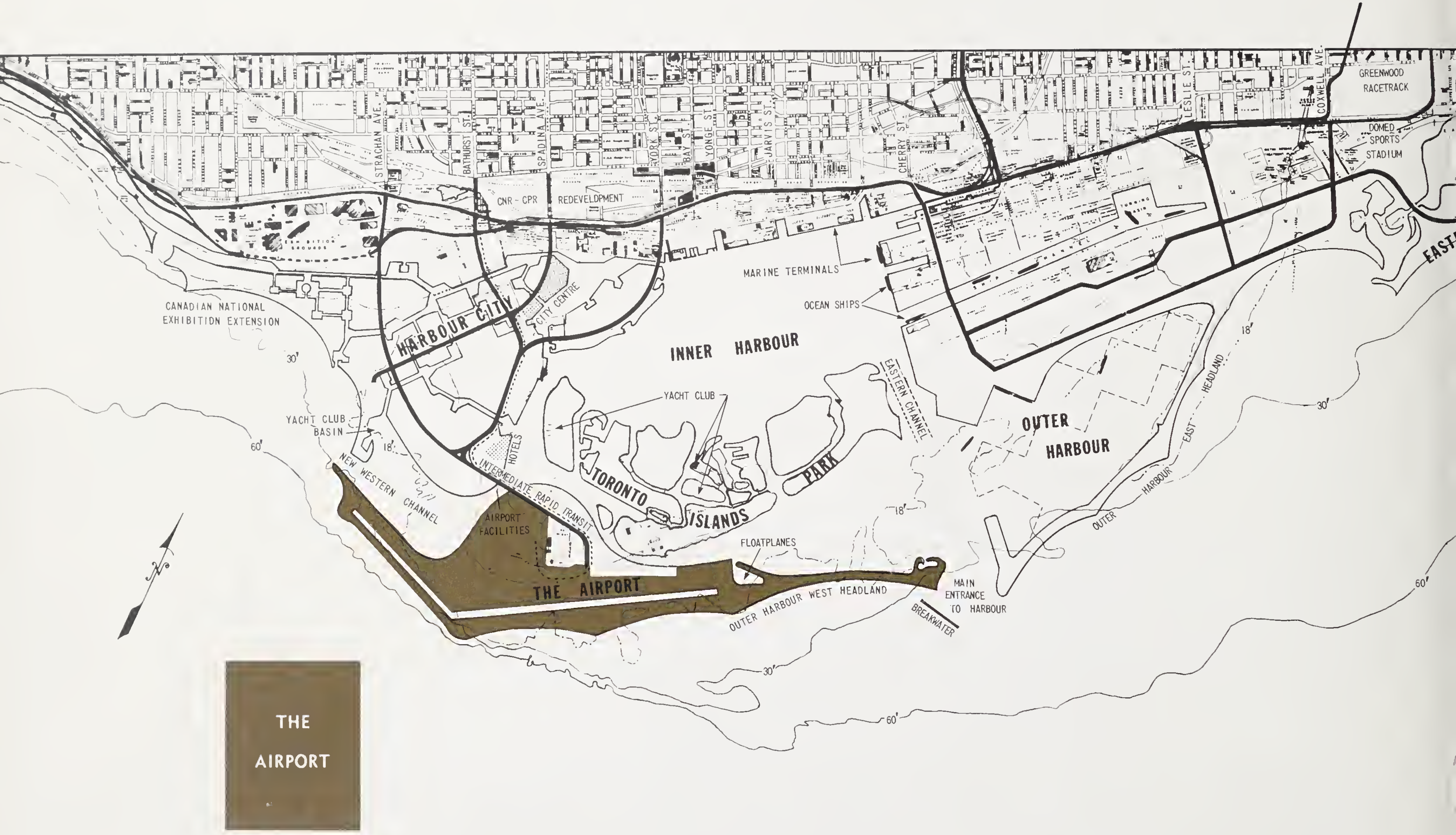
With the rapid growth of the Outer Harbour, it now appears that the central Harbour can be left for uses more compatible with adjacent developments. The lands intended for terminal use will be planned in a manner that will provide public access to the waterfront.

The Port of Toronto is fortunate in having a large area suitable for Port expansion, therefore it can permit certain areas of the Port to be put to more intensive use in the interest of City development.

The railway sorting yard area is presently being planned for conversion to commercial and residential uses. The adjacent Harbour area will be non-compatible. This area is comprised of grain elevators, warehousing with trucks and railways, brick manufacturing, as well as many miscellaneous industries not requiring waterfront location. The grain elevators are reaching obsolescence and the dimensions of the dock properties are not suitable for the larger-sized vessels. It would seem to be in the general interest of the community to allow this section of the Port to be redeveloped in a manner compatible with the future adjacent uses.

The grain industries in the west part of the Port should be encouraged to relocate with modern facilities in the Outer Harbour area where there will be large areas suitable for clean industries requiring water-borne cargo. Such a move would take place only when it is economically feasible. However, the moving of these industries would permit the filling of a portion of the Harbour to create a large tract of very valuable land. The loss of a section of the Harbour for recreational boating would be offset many-fold by the proposed new protected waters south of the Island.

It is considered desirable to retain a western entrance to the harbour in order to provide for a small craft entrance and a secondary channel for emergency shipping. This would also provide the necessary water circulation in the Inner Harbour. Therefore, a new Western Channel south of the Harbour City residential complex is planned. In this way, the major source of vehicular traffic will be on the mainland side of the bridge. As it is proposed that commercial shipping would use the Western Channel only by prior arrangement with the Harbour Master, a lift bridge with clearance for pleasure craft over the Channel while in the closed position would be suitable for both vehicular and marine traffic. In the interests of safety, provision is made in the plan for segregation of small boat traffic from commercial shipping.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INTERMEDIATE RAPID TRANSIT
TORONTO ISLANDS PARK
OUTER HARBOUR
OUTER HARBOUR EAST HEADLAND
NEW WESTERN CHANNEL
AIRPORT FACILITIES
FLOATPLANES
THE AIRPORT
OUTER HARBOUR WEST HEADLAND
MAIN ENTRANCE TO HARBOUR
BREAKWATER
TURNING BASIN
EAST
18'
30'
60'
THE AIRPORT

the airport

BACKGROUND

Twenty years ago, the crucial need for airport facilities to the development of Toronto was accurately forecast.

Accordingly, the Toronto Harbour Commissioners, acting as agents of the City of Toronto, built Malton Airport, and on largely reclaimed land, Toronto Island Airport.

Today, Malton is of course Toronto International Airport. The Island Airport, however, has never progressed beyond a local airport used mainly for small aircraft.

This lack of growth can be traced to three causes:

(1) On its present site, the Airport cannot be further expanded.

(2) Access by ferry boat is inconvenient.

(3) Proximity of high buildings precludes the use of instrument landing systems necessary for scheduled commercial airline traffic.

With these restrictions, the present Airport can no longer serve the needs of the City. In addition, its location hampers the development of the Toronto Islands because it acts as a barrier against movement to and from the Islands. One of the major keys to the success of the waterfront plan is the planned use of the present Airport lands for the proposed Harbour City residential complex.

The Island Airport must be eliminated or moved to a location where expansion is possible.

The Federal Department of Transport is currently studying the air traffic requirements of the general Toronto region.

The Concept presumes that these studies will indicate that a downtown Airport will be beneficial to the development of Toronto.

PRESENT ISLAND AIRPORT IS ISOLATED FROM THE TORONTO MAINLAND BY THE WESTERN CHANNEL AND AS A RESULT HAS NEVER BEEN FULLY UTILIZED

Toronto is most fortunate in having the means and site at hand to create a modern downtown Airport especially designed to meet the demands of inter-city jet aircraft.

The Conceptual Plan is based on reclaiming large areas of land from dredging south of the Islands. To provide the protection for the dredging operation, it is necessary to construct the Outer Harbour West Headland and the land protecting the new Western Channel. With some enlargement of these lands, the site of the Airport is provided.

PROPOSED FEATURES

(1) Easy access, minutes from Toronto's business centre, by intermediate rapid transit or car will be one of the main assets of this Airport.

(2) The Airport will have two runways with approaches free of the City, over water. Ship traffic in the new main entrance to the Harbour will not interfere with the flightways.

(3) The main runway will accommodate inter-city jet aircraft such as the new DC-9. The runway approach lighting and instrument landing system equipment will be accommodated on the Outer Harbour West Headland.

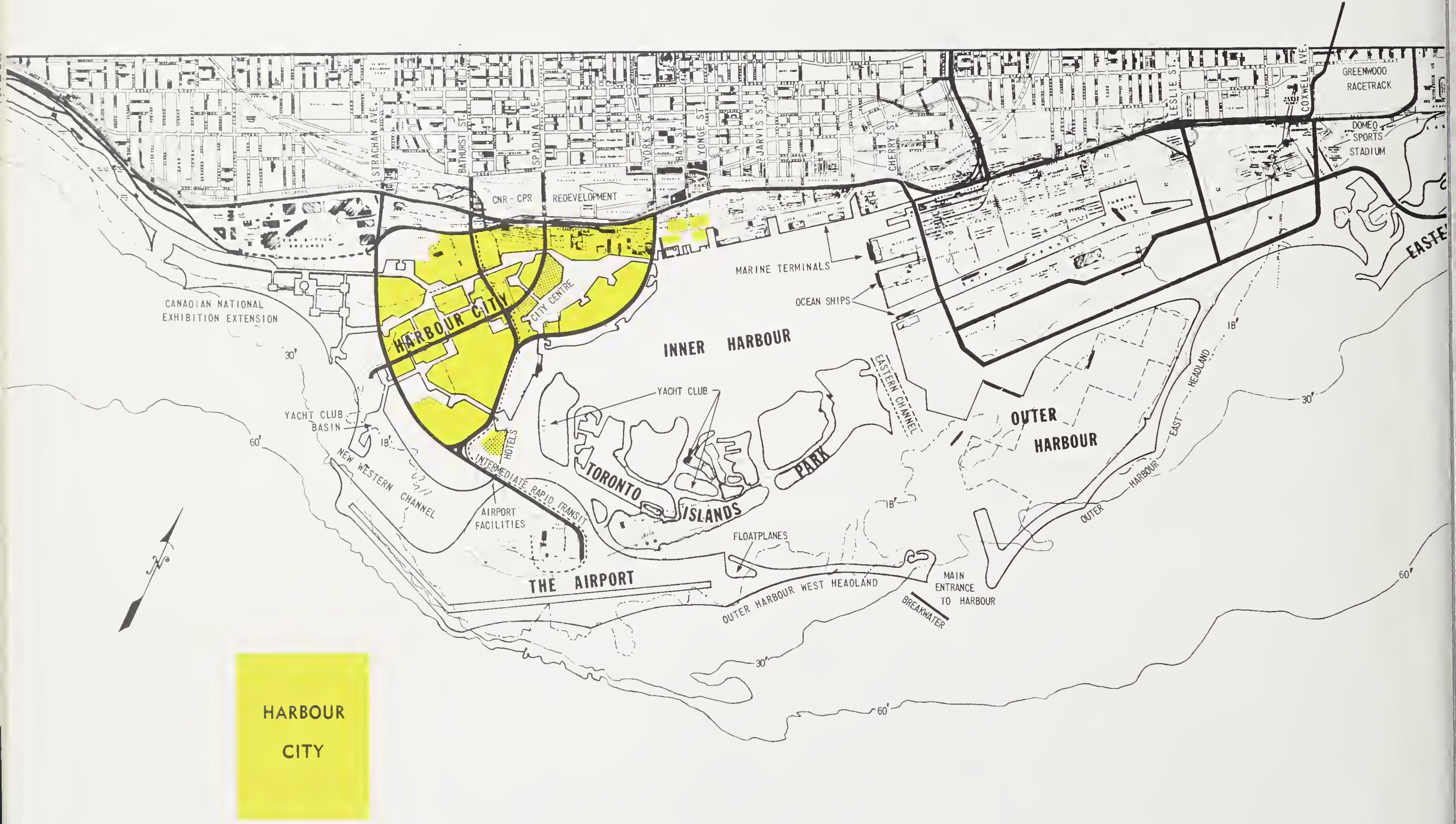
(4) The second, shorter runway is positioned to obtain maximum protection from crosswinds. It will be used for smaller light aircraft sensitive to the dangers of winds.

(5) Current aircraft technology points to the use of shorter runways. This trend arises out of the development of short takeoff and landing (STOL) aircraft, now in service, and vertical takeoff and landing aircraft (VTOL), now nearing service. As these aircraft come into greater use, the waterfront Airport will prove ideal for them.

(6) Docking facilities will be provided for floatplanes at the eastern end of the Airport.

THE WATERFRONT AIRPORT WOULD BE CAPABLE OF HANDLING INTER-CITY JETS SUCH AS THE 90 PASSENGER DC-9

12 PASSENGER JET STAR—EXECUTIVE AIRCRAFT PLAY AN EVER INCREASING ROLE IN CORPORATE BUSINESS. RAPID TRANSPORTATION ROUTES TO THE BUSINESS CENTRES ARE ESSENTIAL TO DEVELOPMENT


STRACHAN AVE.
BATHURST ST.
SPADINA AVE.
YORK ST.
BAY ST.
YONGE ST.
JARVIS ST.
CHERRY ST.
LESLIE ST.
COXWELL AVE.
GREENWOOD RACETRACK
DOMED SPORTS STADIUM
CNR - CPR
REDEVELOPMENT
EXHIBITION GROUNDS
CANADIAN NATIONAL EXHIBITION EXTENSION
HARBOUR CITY
CITY CENTRE
MARINE TERMINALS
OCEAN SHIPS
INNER HARBOUR
EASTERN CHANNEL
OUTER HARBOUR
EAST HEADLAND
OUTER HARBOUR EAST HEADLAND
EASTE
YACHT CLUB
YACHT CLUB BASIN
NEW WESTERN CHANNEL
HOTELS
INTERMEDIATE RAPID TRANSIT
AIRPORT FACILITIES
TORONTO ISLANDS PARK
FLOATPLANES
THE AIRPORT
OUTER HARBOUR WEST HEADLAND
BREAKWATER
MAIN ENTRANCE TO HARBOUR
30'
60'
18'
HARBOUR CITY

harbour city

THE OPPORTUNITY

The waterfront redevelopment plan will instigate two important moves.

(1) Upon completion of dredging, the Eastern Channel will become the main ship entrance to the Harbour. The Western Channel, at present the main entrance, will be filled except for a small boat channel and a new channel will be opened to the south.

(2) The creation of the waterfront Airport will supersede the present Island Airport and free the land on which it stands.

Because of these moves, Toronto will be presented a unique prize: and area which can be enlarged to 400 acres of prime urban land with direct access to downtown Toronto. Seldom does such an opportunity become available to any city.

As a site for development, it has the following advantages:

(1) It is immediately adjacent to downtown.

(2) It is immediately adjacent to major transportation routes.

(3) It is immediately adjacent to major recreational areas.

(4) It has a magnificent setting between the Lake and the downtown.

(5) With the removal of the Airport and the relocation of the grain industries, no major problems of displacement or relocation remain.

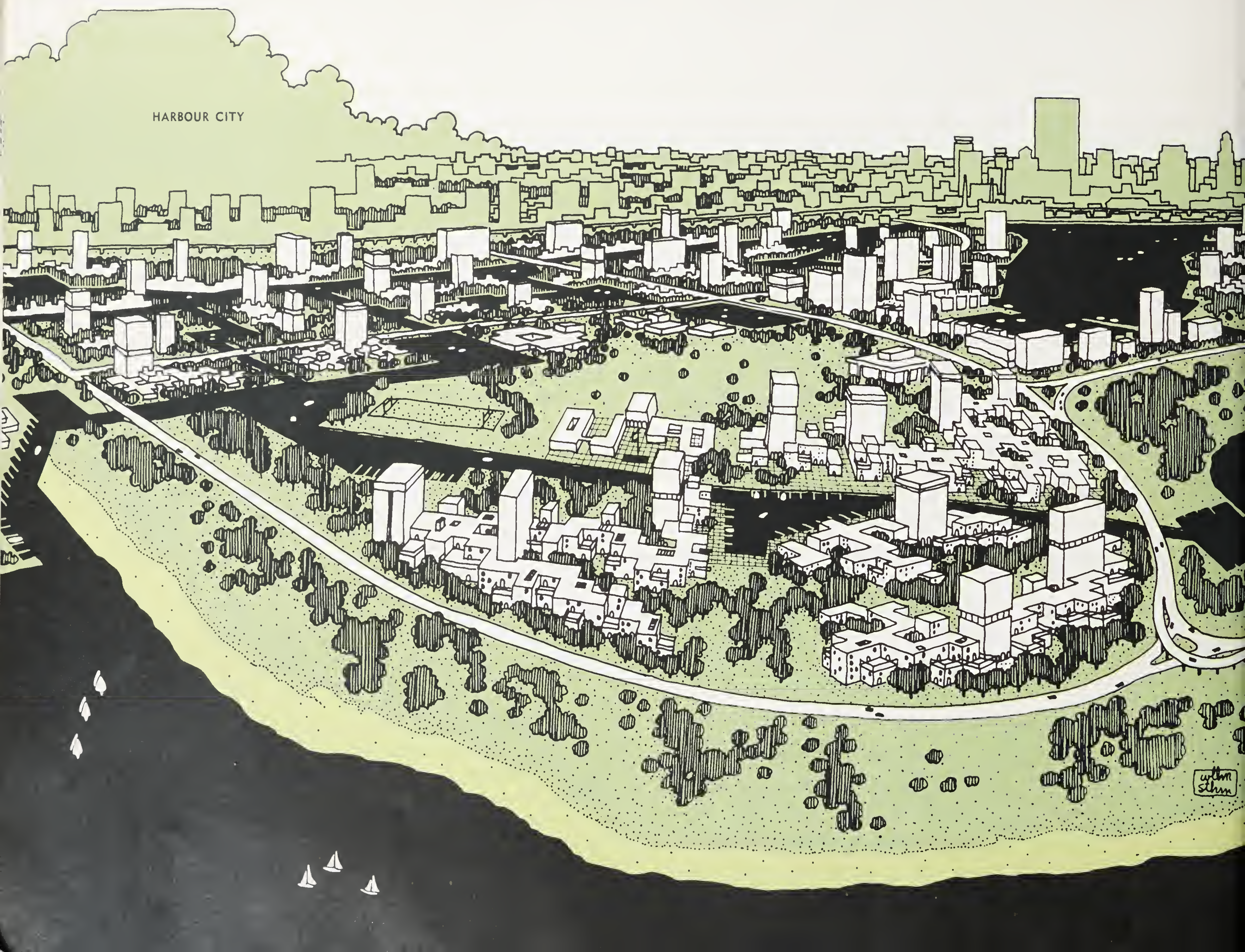
(6) Foundation conditions are good.

(7) The land can be obtained cheaply.

The plan, therefore, proposes to realize the maximum potential offered by using the 400 acres to create a City for 50,000 people.

THE CONCEPT

Harbour City is conceived as a unique urban complex reflecting in its design, its close association with Lake Ontario and its proximity to one of the most important urban areas in North America. High densities and multi-level circulation will achieve a compactness to contrast with the openness of its location, to afford enclosure and protection, to create facilities that can be compactly arranged to enable easy walking access to all parts of the community. It will be a special community, creating a special and distinctive environment: a place to remember, a place to visit, a source of identity and pride to its residents and Toronto.


HARBOUR CITY

THE FEATURES

(1) Harbour City will be "Home" for 50,000 people—an addition of nearly 7% to the present population of the City of Toronto.

(2) The residents of Harbour City will not be packed into narrow, vertical boxes. Rather, they will live in a series of spacious, informally arranged apartment complexes.

(3) The apartment complexes will be separated and interlaced with internal waterways, pedestrian pathways, open, airy spaces, and frequent parkettes.

(4) Harbour City will contain its own city centre with stores, theatre, restaurants, schools, library, churches, utilities and services. In addition, it will offer hotel accommodation for visitors arriving by road, water, air or rail.

(5) The internal waterways will greatly enhance the aesthetic setting of Harbour City. The residents and visitors will cruise the waterways past tall buildings, through shopping areas, under bridges, into parks. Such activity adds interest and vitality for all. The area will create a suitable power boat environment that is now largely lacking in Lake Ontario. Residents will be able to dock their boats near their front doors. Fixed bridges for cars and people will cross the waterways at various points but will give adequate clearance for motorboats. Sailboats will be restricted to Harbour City's outer perimeter. In the winter, the waterways will become lighted skating trails.

(6) Pedestrian paths will follow the waterways but will be separated from car traffic. Walkers will amble through an all-season environment of covered walkways, trees, parkettes, restaurants, skating rinks.

(7) The views obtained from all sides of Harbour City will be magnificent. Toronto's skyline, Lake Ontario, Toronto's Harbour and the Toronto Islands Park will all be a part of the surrounding scene.

(8) The proposed waterfront Airport limits Harbour City building heights to 150 ft. or 17 stories. Harbour City has been designed to place nearly one mile of water and parkland between it and the nearest part of the Airport.

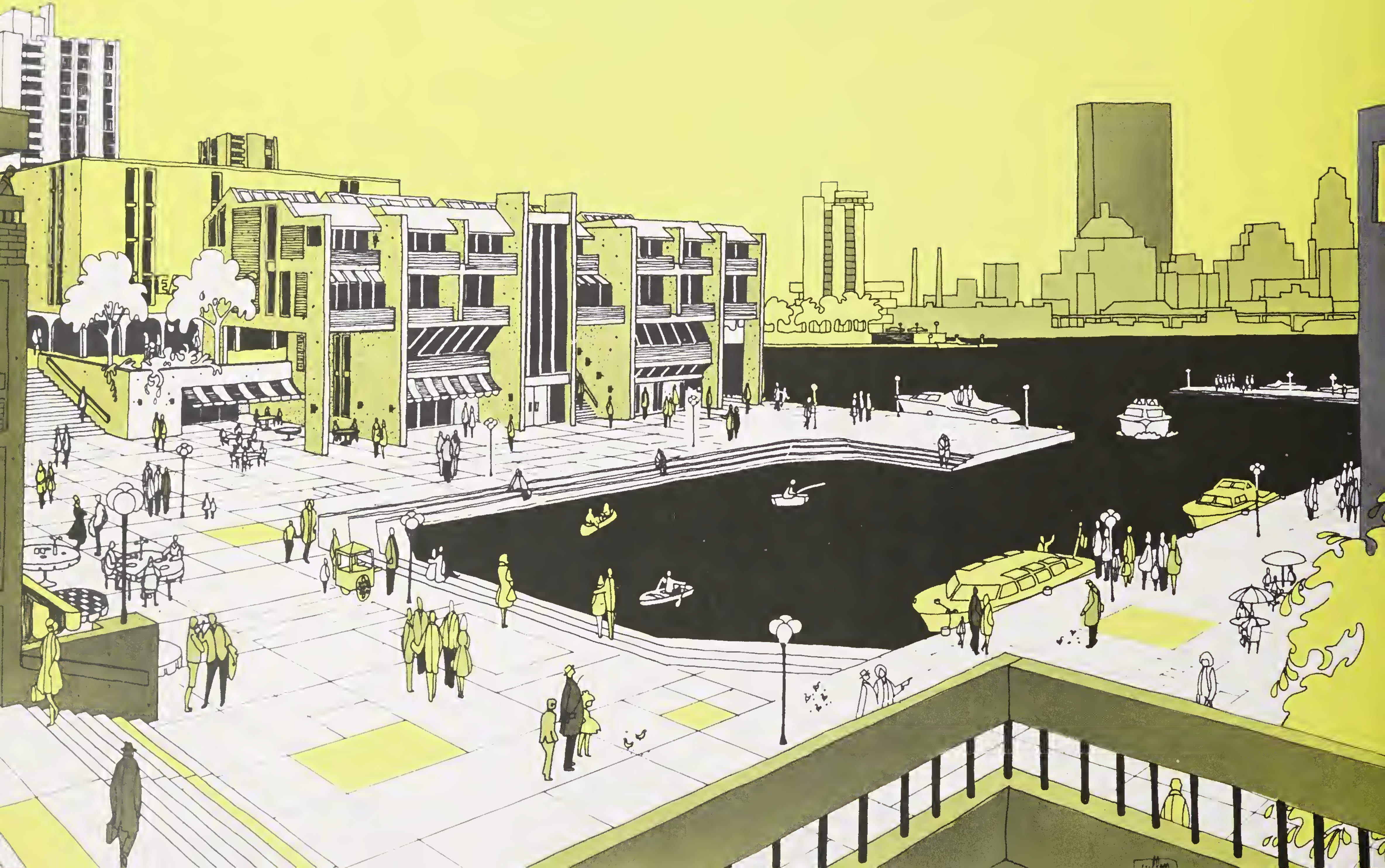
(9) Primary grade schools will be located in close proximity to each neighbourhood. Senior grade schools will be located on a central campus with playing fields, gymnasium, auditorium, library, swimming pools, and skating rinks.

THE BENEFITS

(1) Harbour City will provide a pleasant home for 50,000 people, thus helping to alleviate the current critical housing shortage.

(2) The value of the land used by Harbour City for high-density residential purpose will amount to many millions of dollars. The net revenue that can be derived from this land will surpass the total cost of land reclamation required for the Waterfront Airport, the Exhibition, the Toronto Island Parks, and Harbour City itself. Thus, Harbour City forms the keystone of the waterfront redevelopment plan.

HARBOUR CITY CENTRE



(3) Harbour City will create new vitality and identity for downtown Toronto. It will act as a catalyst, just as the City Hall did. At home, it will instill a sense of pride in Torontonians. Away from home it will bring Toronto further recognition as a highly progressive city.

SURROUNDING REDEVELOPMENT

(1) The proposed redevelopment of the railway sorting yards, the proposed Marvo project, and Harbour City complement each other.

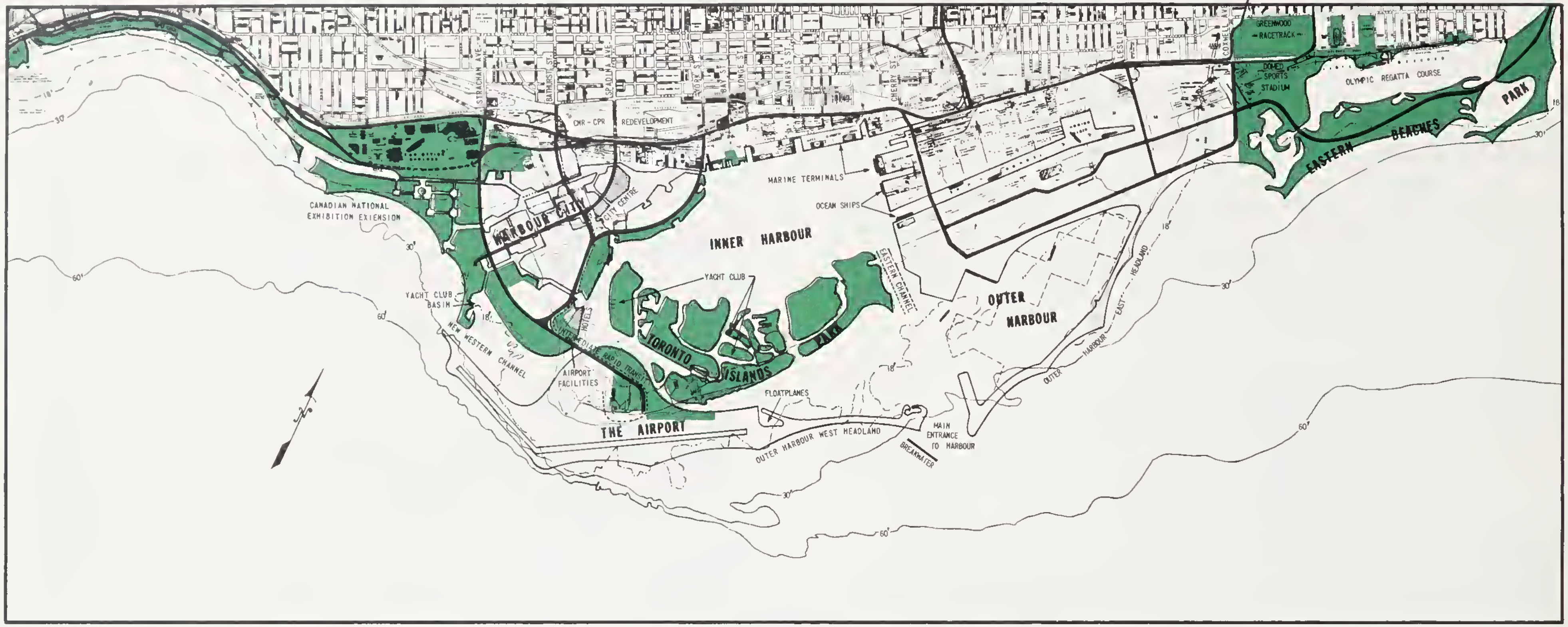
(2) Because of the overall waterfront redevelopment plan, grain industries incompatible with adjacent residential uses will be relocated in the Outer Harbour, freeing the land for new usage. These industries require docks and channels for ships. Therefore, the process of filling along part of the Inner Harbour can only proceed after their relocation.

THE FERRIES WILL BE RETAINED AS AN INTERESTING SUPPLEMENTARY TRANSPORTATION SYSTEM FOR THE ISLANDS

TRANSPORTATION

The proposed construction of a new Western Channel and the filling of the existing Channel will create a large peninsula which will greatly simplify transportation links with the City.

To move thousands of people swiftly and efficiently between the centre of Toronto and Harbour City, the Waterfront Airport, Toronto Islands Parks and the Exhibition area, an intermediate rapid transit is proposed. It would link up with City transportation.



the parks

NEED FOR NEW PARK DEVELOPMENT

Every year an influx of thousands of new people come to Metropolitan Toronto, and by 1980 one million more people will live here. They will be accommodated mainly in tightly grouped urban settlements. Like existing Toronto residents, one of their major needs will be for recreational open spaces. A place where there is room to walk, for sports, to enjoy the seasons and find the refreshment of privacy and nature. The city government has already noted the severe deficiency of open spaces. With population increases, more leisure time, higher density living and an increase of young adults and teenagers, major new areas of parkland will be needed.

PARKLAND PROPOSAL

The plan for redevelopment for Toronto's waterfront provides for three major waterfront parks: Exhibition Park and Toronto Islands Park to be enlarged and improved, and a new Eastern Beaches Park to be created.

In total, 800 new acres of waterfront parkland will be created within the City of Toronto. This will be an overall increase of 80%, an increase in total protected water of 74%, and an addition of 32 miles of shoreline.

This proposal can be achieved at a very low cost by dredging the deep deposits of fine sand available and creating new land where relatively shallow water now exists. In this manner, the maximum utilization of the natural assets of sand deposits will be effected.

A final essential feature of parks is the provision of recreational facilities over the whole waterfront so that one area is not harmed by over intensive development or by lack of facilities.

GENERAL FEATURES

(1) Extensive protected waterways for pleasure boating will be created. Sightseeing tours of these waterways will be inaugurated. Small boat channels will be provided where necessary in order to minimize possible conflicts with commercial shipping.

(2) A much greater proportion of the waterfront area will be made accessible to the public. Where practical, choice observation areas for viewing Port activities will be provided. Conducted tours through the most active parts of Port operations are an attraction that will be increased.

(3) Many scenic automobile routes will be created, but will not cut off the waterfront from pedestrians.

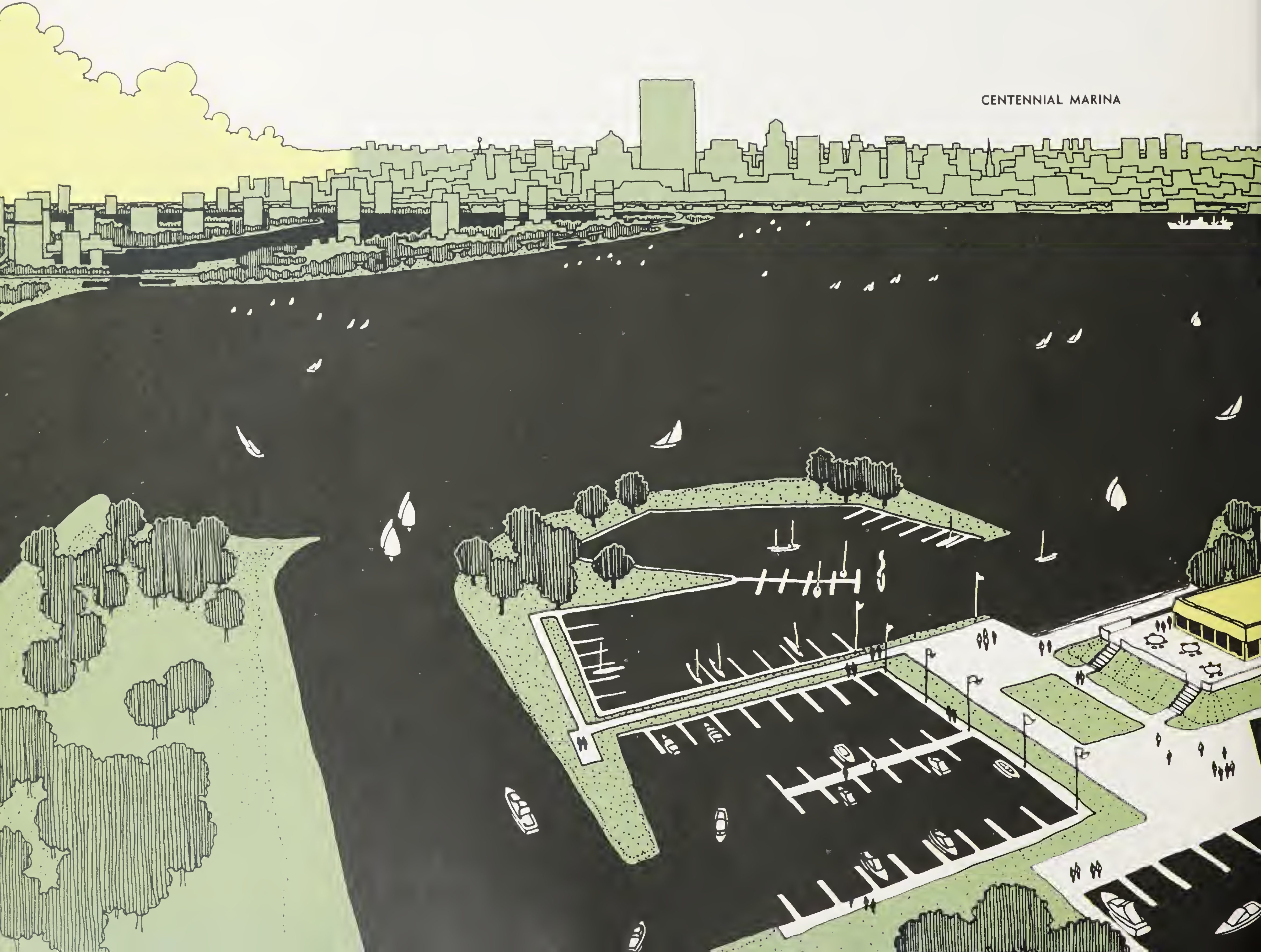
(4) Eastern and Western Beaches will benefit from the close proximity of residential neighbourhoods giving them a year round vitality. Similarly, a new vitality will be provided for the Island Parks by Harbour City.

BUILDING SUNNYSIDE BY DREDGING FROM LAKE ONTARIO IN 1916

EXHIBITION PARK

Since the inception of the Canadian National Exhibition, public tastes and demands have undergone decisive changes. Because of this, the C.N.E. is now studying methods of improvement and expansion. However, changes must be effected without interruption of the fair.

The plan contemplates an expansion of Exhibition Park into Lake Ontario, thus creating much new land with direct access to beaches along the lakeshore.


CENTENNIAL MARINA

To greatly enhance the Park, waterways could be made throughout the area. Provision would be made to accommodate the destroyer "Haida" and other visiting naval craft.

Filling in front of the Exhibition would necessitate the relocation of the Yacht Clubs on Stadium Road and H.M.C.S. "York". A preferable location lies in the new Western Entrance Basin. The present location is very hazardous for small craft during strong southwest winds.

TORONTO ISLANDS PARK

Very few cities of the world can rival Toronto's Islands as a waterfront park. This park serves a vital recreational need of the Toronto region. The multitude of small waterways, the proximity of downtown, and the complete absence of the automobile make this a most unique recreational area.

The most pressing problem facing Toronto Islands is the limited transportation facilities. Previous attempts to provide land transportation have been seriously impaired by the formidable barrier of the Western Channel and the Island Airport on the west, the long approaches through industrial lands over lift bridges on the east, and the desire of the Port to keep the Eastern Channel free of bridges for its eventual role of main entrance to the inner harbour.

There is also a lack of adequate car parking facilities to serve the Islands. The plan provides for car parking areas and envisions intermediate rapid transit facilities while retaining the ferries as an interesting supplementary distribution system.

By relocating the Airport to the south of the Islands as well as moving the Western Channel, the transportation links with the City can be brought to the Islands. A new wide channel crossed by pedestrian bridges would separate the car park areas from the Islands. Through a chain of parks, the Island would be linked with Exhibition Park and the core of the City.

Further enlargement of the Toronto Islands Park could be accomplished by extension into the bay. It is probable that the need for more room will present itself, for some of the Yacht Clubs already lack the space required to accommodate additional boats.

EASTERN BEACHES PARK

Two plans have been proposed for the Eastern Beaches area. They are, however, compatible with each other.

The City of Toronto Planning Board has proposed a small enlargement of the Beach Area and a new marina for 500 boats, by dumping fill with trucks similar to the Outer Harbour Eastern Headland method.

The Toronto Harbour Commissioners' plan proposes much more extensive land reclamation by dredging. Neither scheme would be harmed by the other and the proposal has been integrated into the Harbour Commissioners' plan and could be considered as a first phase of development.

In either case, before extending Coatsworth Cut breakwaters, water current studies should be carried out to determine if the main sewage treatment outfall should be extended so as not to trap the effluent in the bay.

Except for Woodbine Beach, the Eastern Beaches constitute primarily neighbourhood parks. In the massive fill plan, this character is retained adjacent to most of the residential area, but the majority of the 400 acres of filled lands are intended for regional park use.

The Eastern Beaches Park would serve as an excellent major sports complex. A complex of this nature requires a central location with extensive land area for facilities, car parking and efficient transportation links. These criteria could be met at the Eastern Beaches Park with extensive land reclamation.

Vehicular access will be greatly improved with the construction of the Scarborough Expressway and good public transit could be provided by the proposed Queen Street Subway.

The Park now possesses an Olympic swimming pool and the plan provides for the construction of an Olympic size regatta course. But of utmost importance is the creation of a large domed stadium. Such a stadium would make this area ideally suited to the staging of international sports activities, such as the Olympic Games.

Most of the new shoreline created would be in the form of sand beaches. Woodbine Beach could be replaced with other beaches before that portion of the filling program was carried out.

The cost of creating the more than 400 acres of new park land (larger than High Park) would be in the order of ten million dollars. Additional cost would be involved in landscaping and developing the parks.

Should the Olympic Games be staged in Toronto, an Olympic Village will be constructed in the Eastern Beaches area to accommodate visiting athletes. Subsequently, the village could be transformed into low cost housing units.

The entire Eastern Beaches Park area could be made self-supporting through revenues gained from the sports complex and the residential uses.

engineering and construction

INTRODUCTION

It is not intended, in this report, to set out in detail all the engineering study that has been carried out on the project. Only the salient features are presented.

Preliminary study and the success of work already done in constructing the Outer Harbour East Headland have proved the validity of the following:

(1) That sufficient suitable material is available for the creation of land necessary to the plan.

(2) That coastal engineering problems of shoreline protection, silting, etc., can be overcome.

(3) That suitable dredging equipment can be obtained to complete the program in five years at a cost of about $20,000 an acre of reclaimed land.

(1) *AVAILABILITY OF MATERIAL*

The Toronto Islands were created over a period of about 8,000 years by littoral drift of material eroded from Scarborough Bluffs. Only a small proportion of the total eroded material has been deposited; the majority, consisting of fine silt and clay, is carried to the deep parts of the lake. This natural water-segregation and the deep deposits, formed into gently sloping beaches, make possible the practicality of this waterfront plan.

There is a general misconception that littoral drift in the Toronto area is caused by water currents from the Niagara River. In fact, littoral drift is the net result of the movement of beach sand primarily due to wave action. Since the most severe waves come from the East because of the longer fetch or distance of wave build-up, most littoral drift is towards the West. The wave action sets up the along-shoreline current that carries the sand particles put into suspension by wave agitation. Generally speaking, a wave will not move sand in water which is deeper than 1½ times the height of the wave. The maximum wave height in the Toronto area is about 13½ feet. It follows, therefore, that bottom sand in water deeper than 20 feet will not be moved by wave agitation.

Borings taken in the lake from the Western Channel to Coatsworth Cut show that more than sufficient material is available for the dredging requirements of this plan. These borings have established also the suitability of the soil. These deposits of sand become economically available for the land reclamation by hydraulic dredging when Harbour headlands are constructed to protect the dredging operation from storm waves.

(2) *COASTAL ENGINEERING*

For the construction of the Outer Harbour East Headland, now nearing completion, about 150,000 cubic yards per year of material from maintenance dredging of the Keating Channel are dumped in line with the headland. On top of this is dumped annually about 1,000,000 cubic yards of excavated and demolition material from the city. The end of the headland is now in about 30 feet of water.

Soft materials such as clay are used to form the core, and coarser material such as brick from demolition is dumped on the side exposed to storm waves. Large blocks of concrete are used as armour stone to protect the ends of promontories. These promontories are built out with heavy fill at intervals along the storm-exposed shore line, and sandy material is dumped along the steep banks between them.

The sandy material is shifted by wave action until a beach with a stable slope has been formed. In this way, the forces of nature are harnessed.

Experience gained and principles learned in the construction of the Outer Harbour East Headland form the key to the feasibility of the plan. Shore protection methods evolved make economic land reclamation in the lake possible.

It has been observed, and confirmed by experiments in various parts of the world, that sand coarser than 100 mesh size moves laterally along a beach, but finer soils are eroded and deposited in deep water. If promontories extend out from the shore line, they will contain the littoral drift and form beaches. It is fortunate that the majority of sand deposits in the areas to be dredged are coarser than 100 mesh size. Therefore dredge material can establish beaches as part of reclaimed land.

THE "SHUNIAH" DREDGING IN TORONTO HARBOUR DURING CONSTRUCTION OF THE SHIP CHANNEL EXTENSION 1962

The shape of beaches formed in this manner will be curved in an arc. When promontories are long and far apart, the beaches are curved in long flat arcs, but when the promontories are short and closely spaced, the beach curvature is more pronounced.

(3) *DREDGING*

To complete the proposed program within the scheduled five years a dredge capable of dredging one million cubic yards per month would be required. A 27-inch diameter hydraulic cutter head suction dredge would be suitable, and with a booster pumping station, material could be piped more than 2 miles.

A total of 43 million cubic yards of material is needed to build land in Lake Ontario adjacent to the Toronto Islands.

The majority of this material can be dredged from the West half of the Outer Harbour and the basin forming the new West Entrance to the Harbour. Approximately 20 per cent will be dredged from the lake. Calculations have been based on dredging to a depth of 70 feet except where retention of a stable slope adjacent to the shore line imposes a further limitation.

Soil borings and soundings are not complete in the Eastern Beaches area. Figures for this dredging are not included in the above quantities.

The total area of reclaimed land included in the plan is about 1,700 acres, which almost equals the total reclaimed over the past 50 years. This includes 150 acres of filled land in the Inner Harbour, forming part of Harbour City, which will come from city excavations and demolitions.

CONSTRUCTION SEQUENCE

Work should begin with the dredging of the Eastern Channel to Seaway depth. This will allow the eastern Channel to become the main entrance to the Harbour, providing easier and shorter access to commercial shipping routes.

Once the present Western Entrance is clear of shipping, land fill will permit a short bridge to be built over it. Another bridge, linking the present Airport area with the existing land which is to become part of the new Waterfront Airport, will complete land transportation for equipment to the new airport area.

The material dredged from the Eastern Channel would be used to form the Outer Harbour West Headland which would provide protection for the dredge in the Outer Harbour area. Material dredged from this protected area would be used to extend the headland and to commence land reclamation south of the Islands.

When the main runway of the Waterfront Airport is available for use and essential airport facilities have been provided, the new airport can begin to operate.

The site of the present Airport will then be available to allow work to begin on Harbour City.

Dredging at the western end of the new Outer Harbour will provide fill to complete the land area for the new airport, the south-west portion of Harbour City and part of the extension of the Canadian National Exhibition.

At this stage, the headland which includes the new Yacht Club Basin would be built, enabling the existing Yacht Clubs to be relocated.

When the second runway is completed about this time, it will allow the Waterfront Airport to become completely operative, and provide protection for the dredge to work in the new Western Channel.

The industries presently located adjacent to the Inner Harbour would have to be relocated in the Outer Harbour area before the new islands in the bay can be created to complete the site for Harbour City.

The Eastern Beaches park land reclamation can be considered as a separate project if completion dates so require.

steps to implementation

The Bold Concept for the redevelopment of the Toronto waterfront is already turning into reality. The Outer Harbour East Headland started two years ago will be completed in 1970. The new Eastern Channel is needed now for port purposes and should be built without delay. The dredged material from this Channel will build part of the Outer Harbour West Headland. All of the dredging for land creation in the Island area can be completed in five years. The construction of a super hydraulic dredge is under consideration.

The Commissioners are placing before the City of Toronto a request for an agreement concerning joint land use in Harbour City including guarantees of imaginative town planning and also asking for zoning changes.

The Department of Lands and Forests of the Government of Ontario has guaranteed that their waterlots will be available for total development.

The Department of Transport, Ottawa, is studying the Airport proposal.

The Harbour Commissioners' Engineering Department is proceeding with the multitude of studies leading to the detail plans.

The Metropolitan Toronto Waterfront Advisory Committee is studying the total waterfront plans for the Planning Area before submission to the Metropolitan Toronto Planning Board.

The Canadian National Exhibition Planning Committee is considering the new possibilities now offered.

The planning of park areas is proceeding in close harmony with the Metropolitan Toronto Parks Department.

Close liaison has been established with the Metropolitan and City Planning staffs as well as the planners of the redevelopment of the adjacent railway lands.

The Waterfront Technical Committee has served to strengthen the co-ordination of all lakefront uses into one cohesive plan meshing into the total fabric of the Community.

Many entities will have to participate in effecting the public uses of the new lands. Mr. William R. Allen, Q.C., Chairman of The Municipality of Metropolitan Toronto has proposed a top level co-ordinating committee for this purpose.

The Toronto Harbour Commissioners offer to all parties full co-operation and assistance.

It is in this spirit we shall convert this Bold Concept into "Tomorrow's Waterfront Today".

The Toronto Harbour Commissioners gratefully acknowledge the assistance received during the preparation of this plan. Many individuals and organizations as well as civic departments and officials of other levels of government have contributed comments and suggestions which have been invaluable. In particular, the design of Harbour City incorporates many proposals submitted to the Commissioners by Eli Comay & Johnson Sustronk Weinstein.

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